

ABSTRACT

An LED polarimeter is described which is suitable for measuring the stress in photoelastic materials. The polarimeter comprises a sequential arrangement of an LED light source, a first polarizer, a $\frac{1}{4}$ wave plate, and a second polarizer substantially aligned along a central axis. The relatively monochromatic LED light source essentially eliminates errors caused by chromatic aberrations and heat damage to the polarizing film. Preferably, the LED light source emits in the green region of the visible spectrum to take advantage of the sensitivity of the human eye to this part of the spectrum.